

What is claimed is:

Claims:

1. A nozzle for dispensing a liquid filament onto a strand, comprising:
  - a nozzle body having a liquid supply port, a process air supply port, and a liquid discharge passage connected in fluid communication with
  - 5 said liquid supply port;
  - a mounting surface configured for mounting said nozzle body to a valve module; and
  - a process air outlet formed in said nozzle body, said process air outlet coupled in fluid communication with said process air supply port, and said
  - 10 process air outlet oriented to discharge an air stream impinging the strand before the liquid filament is dispensed from said liquid discharge passage onto the strand.

2. The nozzle of claim 1 further comprising:
  - a strand guide coupled directly with said nozzle body and having opposed first and second sidewalls positioned adjacent said liquid discharge passage, said first and second sidewalls constraining lateral movement of the strand relative to said liquid discharge passage.
3. The nozzle of claim 2 wherein said process air outlet is positioned between said opposed first and second sidewalls of said strand guide.
4. The nozzle of claim 2 wherein said nozzle body includes a downstream surface and an upstream surface opposite to said downstream surface, said liquid discharge outlet being located on said downstream surface and said process air outlet being located on said upstream surface.
5. The nozzle of claim 2 wherein said process air stream from said air outlet is oriented to maintain a non-contacting relationship between said strand guide and the stand.
6. The nozzle of claim 1 wherein said nozzle body includes substantially an upstream surface and a downstream surface opposite to said upstream surface, said process air outlet being formed in said upstream surface and said liquid discharge passage being formed in said downstream surface.

7. The nozzle of claim 6 where said nozzle body further includes a plurality of air discharge passages connected in fluid communication with said process air supply port, said plurality of air discharge passages formed on said downstream surface and angled in a direction generally toward said liquid
- 5 discharge passage.

8. An applicator for dispensing a liquid filament onto a moving substrate, comprising:

    a module body having a liquid supply passage and an air supply passage;

5       a nozzle body having a liquid discharge passage connected in fluid communication with said liquid passage; and

    a process air outlet formed in said nozzle body, said process air outlet coupled in fluid communication with said process air supply port, said process air outlet oriented to discharge an air stream impinging the strand

10     before the liquid filament is dispensed from said liquid discharge passage onto the strand.

9. The applicator of claim 8 further comprising:  
a strand guide coupled directly with said nozzle body and having  
opposed first and second sidewalls positioned adjacent said liquid discharge  
passage, said first and second sidewalls constraining lateral movement of the  
5 strand relative to said liquid discharge passage.

10. The applicator of claim 9 wherein said process air outlet is  
positioned between said opposed first and second sidewalls of said strand  
guide.

11. The applicator of claim 9 wherein said nozzle body includes a  
downstream surface and an upstream surface opposite to said downstream  
surface, said liquid discharge outlet being located on said downstream surface  
and said process air outlet being located on said upstream surface.

12. The applicator of claim 9 wherein said process air stream from  
said air outlet is oriented to maintain a non-contacting relationship between said  
strand guide and the stand.

13. The applicator of claim 8 wherein said nozzle body includes an  
upstream surface and a downstream surface opposite to said upstream  
surface, said process air outlet being formed in said upstream surface and said  
liquid discharge passage being formed in said downstream surface.

14. The applicator of claim 13 where said nozzle body further includes a plurality of air discharge passages connected in fluid communication with said process air supply port, said plurality of air discharge passages formed on said downstream surface and angled in a direction generally toward 5 said liquid discharge passage.

15. A method of dispensing a liquid filament onto a strand from a nozzle having a liquid discharge passage, the method comprising:

- moving the strand relative to the nozzle;
- impinging the strand with process air upstream of the liquid discharge passage before the liquid filament is dispensed onto the strand; and
- dispensing the liquid filament from the liquid discharge passage onto the strand.

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16. The method of claim 15 further comprising:  
guiding the strand relative to the liquid discharge passage with a  
strand guide.

17. The method of claim 16 wherein the nozzle includes the strand  
guide and an air discharge passage is located within the strand guide, and  
impinging the strand with process air further comprises:

discharging process air from the air discharge passage positioned  
5 within the strand guide in a direction that impinges the strand.

18. The method of claim 16 wherein the air directed toward the strand  
has a lower temperature than the strand guide, and impinging the stand with  
process air further comprises:

cooling the strand guide and the strand.

19. The method of claim 16 wherein impinging the stand with process  
air further comprises:

maintaining the strand in a spaced relationship with the strand  
guide.

20. The method of claim 15 wherein impinging the stand with process  
air further comprises:

removing particulates from the strand.

21. The method of claim 15 further comprising:  
moving the liquid filament with jets of pressurized air directed  
generally tangentially toward the liquid filament.